

10.0 PERFORMANCE AND SYSTEM AUDITS

10.0.0.1. Independent technical systems and performance audits of field and laboratory activities shall be conducted. The field activities shall be audited by the Prime Contractor's QAO or their designee to assess whether sampling protocol conforms to the criteria specified in the project-specific work plans and this QAPP. The laboratory activities shall be audited by the laboratory's QAO or designee to assess whether analytical protocol conforms to the criteria specified in the project-specific work plans and this QAPP. The systems audit is a qualitative review of the overall sampling or measurement system, while the performance audit is a quantitative assessment of a measurement system, and include both internal and external audits. These audits shall be used to assess whether the resulting data meet the project-specific DQOs, to assess whether the data comply with QC criteria, and to identify the need for corrective action. Definitive data validation is also a quantitative check of the analytical process, where documentation and calculations are evaluated and verified. Data validation is discussed in Sections 8.0 and 12.0. Internal audits shall be conducted by Hill AFB, the Prime Contractor, or the Contract Laboratory's QAO. External audits may be performed by the U.S. EPA Region VIII, the State of Utah, or other governing agencies.

10.1 FIELD PERFORMANCE AND SYSTEM AUDITS

10.1.0.1. Oversight of field procedures shall be the direct responsibility of the Prime Contractor's Project Manager, who shall review all elements of the project-specific work plans and this QAPP to ensure that the objectives of the project are met. In addition to an initial review, the sampling procedures shall be reviewed as the field work progresses so that any necessary modifications can be made.

10.1.0.2. Internal audits of field activities (sampling and measurements) shall be conducted by the Prime Contractor's QAO or designee at a frequency defined in the project-specific work plan. The audits shall include examining field equipment

calibration and documentation records; field instrument operation records; field measurement records; field sampling records including log books and field sampling forms; sample collection, handling, storage, and transportation procedures including organization and minimization of potential contamination sources; and chain-of-custody records and procedures. Field activities shall be audited early in the project to verify that all of the procedures outlined in the project-specific work plans and this QAPP are followed.

10.1.0.3. After the internal audit is completed, a debriefing session shall be held for all participants to discuss the preliminary audit results. The auditor shall prepare an audit evaluation report which includes observations of the deficiencies and the necessary recommendations for corrective actions. Compliance with the specifications presented in the project-specific work plans and this QAPP shall be noted and noncompliance or deviations shall be addressed in writing by the Prime Contractor and forwarded to Hill AFB with corrective actions and a time frame for implementation of the corrective actions. Follow-up audits shall be performed prior to completion of the project to ensure corrective actions have been taken.

10.1.0.4. External field audits are the responsibility of the U.S. EPA Region VIII, the State of Utah, or other governing agencies. External field audits may be conducted at any time during the field operations and are generally based upon the information present in the project-specific work plans or this QAPP. The audits may or may not be announced, at the discretion of regulatory agencies.

10.2 LABORATORY PERFORMANCE AND SYSTEMS AUDITS

10.2.0.1. In-house and regulatory agency audits of laboratory systems and performance are a regular part of the Contract Laboratory's QA program. Internal audits shall be conducted by the laboratory's QAO or designee, and consist of a review of the entire laboratory system and at a minimum shall include: examination of sample receiving,

log-in, storage, and chain-of-custody documentation procedures; sample preparation and analysis; and instrumentation procedures.

10.2.0.2. Internal audits of the selected Contract Laboratory shall be performed by the Prime Contractor. The audit schedule shall be defined in the delivery order scope of services. In general laboratory audits should be conducted within six months of project start up and shall include a review of regulatory agency audit results and review of the following items:

- Sample custody procedures
- Sample handling procedures
- Calibration procedures and documentation
- Completeness of data forms, notebooks, and other reporting requirements
- Data review and validation procedures
- Data storage, filing, and record keeping procedures
- QC procedures, tolerances, and documentation
- Operating conditions of facilities and equipment
- Qualifications of laboratory personnel
- Documentation of training and maintenance activities
- Analytical procedures
- Systems and operations overview
- Security of laboratory automated systems.

10.2.0.3. If an audit has been conducted for another project with the same type of analytical requirements within six months, an additional audit is not required prior to project start-up. Audit results shall be forwarded to Hill AFB by the Prime Contractor. Deficiencies and corrective action procedures shall be clearly documented in the audit report. Contract laboratories should be selected based on the results of the external audit and based upon the ability of the laboratory to meet the project-specific DQOs.

10.2.0.4. External audits are performed by the U.S. EPA Region VIII or the State of Utah prior to or during a project, to verify proper implementation of laboratory procedures and adherence to the project-specific work plans or this QAPP. These audits may or may not be announced and are conducted at the discretion of the auditing agency. External audits generally include (but not be limited to) review of laboratory analytical procedures, laboratory on-site audits, and/or submission of performance evaluation samples to the laboratory for analysis.